POWER VARIABLE LENS

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Abstract of **JP3203709**

PURPOSE:To decrease the number of lens elements and to make the constitution compact by using an spherical surface for a 2nd group to compensate a negative spherical aberration generated in a 2nd group, and making a 1st group meet specific requirements. CONSTITUTION:The 1st group consists of two lenses, i.e. one negative lens and one positive lens and the 2nd group includes at least one spherical surface and consists of two lens elements, i.e. one negative lens and one positive lens; and the spherical surface is shaped to increase in the quantity of displacement from the radius of paraxial curvature as the height of the surface increases from the optical axis, and the 1st group meets the requirements shown by an inequality 1. In the inequality 1, rA is the radius of curvature of the surface closest to the object side in the 1st group and rB is the radius of curvature of the surface closest to the image side in the 1st group. The spherical surface, therefore, compensates the large negative spherical aberration, generated in the 2nd group, in the 2nd group. Consequently, the number of the lens elements is decreased and the constitution is made compact and reduced in cost.

$$0 < r_B / |r_A| < 1.0 \quad (r_A < 0,\ r_B > 0) \quad [1]$$